ENGINEERING NEWS-RECORD

Abutments complete, steel erection for Niagara Falls arch will start this month—*See page 2*

JAN 13 1941

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AVERAGING 1,000 TONS A DAY

. . of one inch mat

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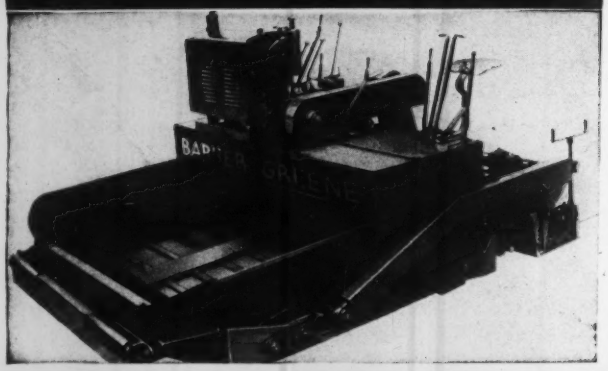


IT takes systematic organization to lay 1,000 tons of 1" x 22' mat any day. But to average 1,000 tons a day for 31 miles of the most beautiful sand asphalt you have ever seen, perfectly leveled, and uniformly compacted, takes more than organization and good intentions—it takes Barber-Greene Tamping-Leveling Finishers.

The State of Georgia is using two of its Barber-Greenes on this two course job from Jesup to Nahunta, not only proving the excellence of Barber-Greene pavement and the economy of B-G operation, but the way in which Barber-Greenes set the pace for the whole project.

40-13

BARBER GREENE

STANDARDIZED MATERIAL HANDLING MACHINES

AURORA ILLINOIS

The Week In Engineering and Construction

ENGINEERING NEWS-RECORD • JANUARY 9, 1941

New construction budget set at $1,164,000,000

In year beginning July, 1941, expenditures will continue at about present rate except for cantonments

A little more than half as much as construction, civil and military, is provided for in President Roosevelt's budget for the fiscal year beginning next July as is being undertaken during the current fiscal year. Total estimates of appropriations for construction in fiscal 1942 amount to about $1,164,000,000 as compared to about $1,900,000,000 during the current year. The chief difference is the money for military construction, which drops sharply as a result of the completion of the cantonment construction program. The item for construction at military posts (which includes cantonments and army air fields) will be only $151,000,000 in 1942 instead of the current $729,000,000. Also cut is the amount for construction of government-owned munitions plants, which is $350,000,000 this fiscal year but is scheduled to drop to $195,000,000 in fiscal 1942.

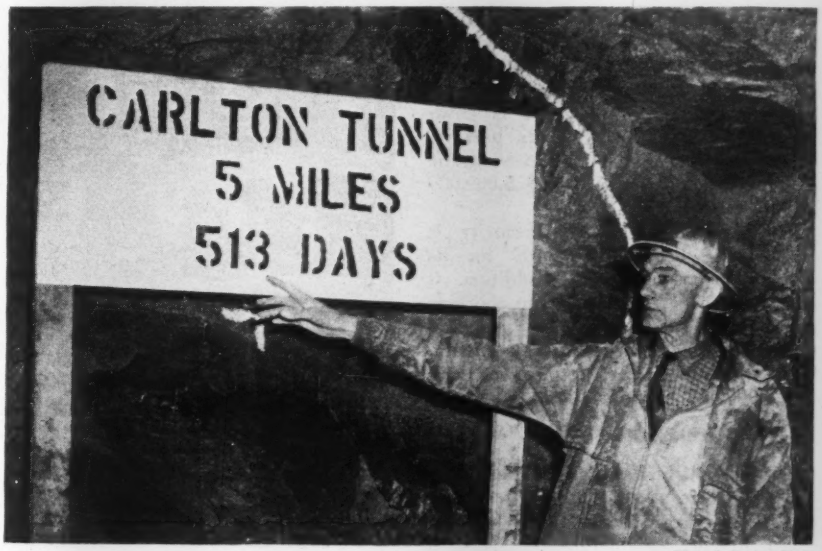
Other items of military construction remain about the same or rise slightly. Public works of the Navy's Bureau of Yards and Docks is allotted $260,000,000 in 1942, only $8,000,000 less than this year. Construction of the new locks for the Panama Canal, for which $15,000,000 is provided this year, will require nearly $35,000,000 in fiscal 1942. More will be spent in 1942 on structures for seacoast defense, $38,000,000 as compared with a current $11,000,000.

Additions are likely

Not too much reliance should be placed on these figures for military expenditures. This year, like last, is likely to see a progressive stepping up of the military effort as the country moves closer to the war. In particular, it is by no means unlikely that by the time the Army is brought up to its scheduled strength of 1,400,000 men, a further increase will be decided on—involving a new barracks construction program. Moreover, the President's budget makes no provision for the scheme by which this country will arm Britain on a loan basis. That plan will doubtless involve some hundreds of millions worth of construction in munitions plants and shipyards.

The civil public works budget is not cut as sharply as the President's remarks in recent months had suggested. The total cut amounts to about $60,000,000 in a half-billion program. Bearing the brunt of the cuts are public buildings, river and harbor improvements, and Mississippi flood control. As previously pointed out in *ENR*, all public buildings outside the District of Columbia are eliminated. Together with a $6,000,000 cut in construction in the district, this saves $20,000,000 reducing the estimate for public buildings to $11,000,000. A $7,600,000 general accounting office building is to be started this year.

River and harbor improvements are cut by $9,000,000 to $20,000,000. General flood control remains practically unchanged at $70,000,000 although appropriations for the flood control in the Mississippi River valley are reduced to $22,000,000, a cut of $8,000,000.



Thos. J. Barbre Photo

Carlton Tunnel sets all-time record for driving speed

John R. Austin, superintendent for the Golden Cycle Corp., Cripple Creek, Colo., points with pride to evidence of a great tunneling record in driving the Carlton Drainage Tunnel 5 mi. in 513 days, an average of 50 ft. per day from a single portal. The 5-mi. mark was reached on Dec. 23, 1940. There is still another mile of main tunnel and 9,000 ft. of laterals to drive before the deep workings of the famous gold mines of the Cripple Creek district will be tapped.

The tunnel, 10x11 ft. in cross section, will drain the Ajax, Vindicator, Cresson, Portland and American Eagle mines. It was started in August, 1939, and is a year ahead of expected progress though driven mostly through hard Pikes Peak granite. The tunnelling operations were described in Engineering News-Record Nov. 7, 1940, p. 60. The project is under the general direction of A. H. Beebe, vice-president. Austin is assisted by J. G. Farmer, engineer, and Robert Welch, master mechanic.

Funds for power installation at Fort Peck and Bonneville dams are slightly reduced to become $1,845,000 and $7,170,000, respectively.

The current $10,500,000 appropriation for power lines at Bonneville and Grand Coulee is increased in 1942 by a little more than $2,000,000 to provide an emergency fund with which to transmit power to defense plants where a need may arise.

Civil airport program

For the civil airport program of the administrator of civil aeronautics, $33,500,000 is allocated for fiscal 1942 as compared with a current $40,000,000. This is to continue the 250-airport program. A congressional effort may be made to increase this item.

Similarly, although the National Advisory Committee for Aeronautics gets $9,000,000 for its laboratory construction, an increase of a half million, all but $3,454,000 is to cover current contract authorizations.

The national park road and parkway fund, $4,300,000 this year, is increased to $9,255,000 for 1942. But nearly all of this will be used to meet obligations incurred this year. The allocation for forest roads and trails is increased by a million to $9,955,000.

TVA allotments

The amount of the public roads appropriation is pretty meaningless, since it simply has to meet obligations already incurred in the authorization bill. It happens that the 1942 figure is down $10,000,000 to $131,000,000, in part reflecting a drop in the authorized grade crossing funds for 1942 from $30,000,000 to $20,000,000.

The Tennessee Valley Authority is allotted the usual $40,000,000 for its regular program and in addition is scheduled to get $30,000,000 to continue the national defense power program (Cherokee Dam plus some new generators) which was started this year with a $25,000,000 appropriation.

Reclamation budget

The amount budgeted for reclamation, $62,800,000, is about a million less than this fiscal year. Some funds will be saved by the completion of Marshall Ford Dam in Texas and the Pine River project and by stopping the Grand Coulee project upon completion of the dam, without building the pumping plant, or irrigation works. This money will be used to speed up the work at Parker Dam, Central Valley, and the Colorado-Big Thompson project, which will be allotted $6,000,000, $25,000,000 and $2,900,000 respectively.

The Valley Gravity canal and storage project is scheduled to be started with an allotment of $2,500,000.

WASHINGTON HIGHLIGHTS

MONTHLY reports on streamflow data at selected stations throughout the country are now being furnished by the U. S. Geological Survey. This information was previously available only some eighteen months or so after the fact in the annual reports of the Survey.

CURRENT PUBLIC ATTACKS on high work permit and initiation fees being collected by AFL building trades unions from workers on army cantonments are being seized upon by the CIO as a means of pushing its Construction Workers Organizing Committee. CWOC members are not now employed on any cantonment or defense housing work. Protests about this situation would be unlikely to get much public attention, but with Congress becoming indignant about work permit charges, a CIO attack on the same thing has publicity value. Late last month, CWOC chairman A. D. Lewis charged in a letter to the Secretary of War that in California the AFL was acting in collusion with the Associated General Contractors and the WPA to force unemployed men to pay high fees (the local AGC chapter replied that the so-called conspiracy was merely a legitimate plan to facilitate employment of WPA workers on closed-shop jobs). Protests over AFL practices in several other areas where CWOC has some strength are now being pushed and will soon be made public. It is to be expected that the handling of a large number of jobs will come in for attack.

George M. Mathieu Photo

Steel erection started for Niagara Falls arch

Construction of the new Rainbow Bridge over the Niagara River between the United States and Canada at Niagara Falls, N. Y., is progressing on schedule. Pouring of concrete for the abutments was completed Dec. 23, and preliminary work for the erection of the main steel arch has started. The span is scheduled to be opened in September.

This new structure, costing approximately $3,760,000, will be the longest fixed-end arch bridge in the world, and is being erected to replace the old Falls View or "Honeymoon" span destroyed by ice in January, 1938. The structure is being constructed about 400 ft. north or downstream of the site of the old span. The new crossing is 1,450 ft. long, including a 950-ft. steel arch. The deck width is 60 ft. overall with two 22-ft. roadways separated by a 4-ft. mall plus a 10 ft. sidewalk on the upstream or Falls side. The center of the skew backs at the abutments are 55 ft. above low water (El. 337 mean sea level) or about 29 ft. above pin centers on the old Falls View Bridge. The above view was taken from the Canadian side.

Bethlehem Steel Co. has the $1,452,000 contract for the main arch span. Other contractors on the work are: McLain Construction Co., Buffalo, and Aiken & MacLachlin, St. Catherines, Ont.

The Edward P. Lupfer Engineering Corp., Buffalo, is supervising construction, and Waddell & Hardesty, New York, prepared the plans for the project. Aymar Embury, 2nd, New York City, is architect. The bridge is being constructed by the Niagara Falls Bridge Commission.

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Sanitary facilities urged for defense boom town

Charlestown, Ind., a town of 950 inhabitants, suddenly finds itself facing the problem of providing proper sanitary facilities and housing for a 14,000 increase in population caused by the construction of the $75,000,000 smokeless powder plant that E. I. du Pont de Nemours & Co. is building for the federal government.

B. A. Poole, state sanitary engineer, reports that additional housing and sanitary facilities are urgently needed. It has been recommended to Governor Hansen of Indiana that at least $250,000 be provided for immediate extension of water and sewage facilities in the Charlestown area.

Other municipalities in the district suffering from lack of adequate water supply are: Henryville, Utica and North Madison, while additional sewage disposal plants are necessary for New Albany, Jeffersonville, Clarksville and Madison.

The State Board of Health has made the following recommendations: (1) assignment of two sanitary engineers to the personnel of the district, (2) establishment of a full time sanitarian in each of the six counties in a 25-mi. radius of the du Pont powder plant, (3) construction of public toilets in Charlestown, (4) construction of many additional medium-priced homes, (5) installation of new chlorination equipment at Sellersburg water plant, (6) adoption of Grade A milk ordinances in cities and towns in the area, (7) additional sanitary facilities for schools within a large area, and (8) elimination of mosquito breeding places.

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Duchesne Tunnel work begun on Provo River

Holing-in of the Duchesne Tunnel, 20 mi. above Kamas, Utah, Dec. 30 signalized the start of work on another important link in the Provo River project. The Utah Construction Co., of Ogden, holders of the $727,575 contract, have been engaged at the site for nearly a month on preliminary work.

Water will be carried through the tunnel from the north fork of the Duchesne River to the Provo River project for storage and distribution at the Deer Creek reservoir in Provo canyon. The tunnel will be 11 ft. in diameter, and will have a capacity of 375 cfs. while unlined and 650 cfs. when lined.

The first unit, for which the present contract was let, is a 3-mi. section of the lower end of the tunnel. The contract terms call for completion within 900 days from last Nov. 10. A $50 a day penalty will apply for failure to finish the work in the time which is allotted.

J. J. Berger is field engineer for the U. S. Bureau of Reclamation, and E. O. Larson is construction engineer, both of Provo, Utah. Cost of the complete tunnel is estimated at $2,000,000.

While no official announcement has been made by either the Bureau of Reclamation or officials of the T. C. Connolly Co., holders of the Deer Creek Dam contract, indications are that work on the dam will be held to a minimum until spring due to bad weather conditions.

Work on the Alpine-Draper Tunnel, third big link in the project, through which the waters of the Provo River are to flow into Salt Lake County, is proceeding on schedule since the tunnel was holed-through Dec. 17.

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Plans studied for Tennessee-Arkansas span

The Memphis-Arkansas Bridge Commission has petitioned the highway department of the two states to start engineering surveys immediately at Memphis to determine the proper location for a proposed span across the Mississippi. E. H. Crump, chairman of the commission, states that as soon as the survey is made engineers will be asked to draw up plans and specifications for proper cost studies by the board of commissioners.

After a recent inspection of Mississippi River crossing facilities both at Memphis and in the Mid-South, Thomas H. McDonald, commissioner of the U. S. Public Roads Administration, announced the proposed structure at Memphis is on the national defense priority list.

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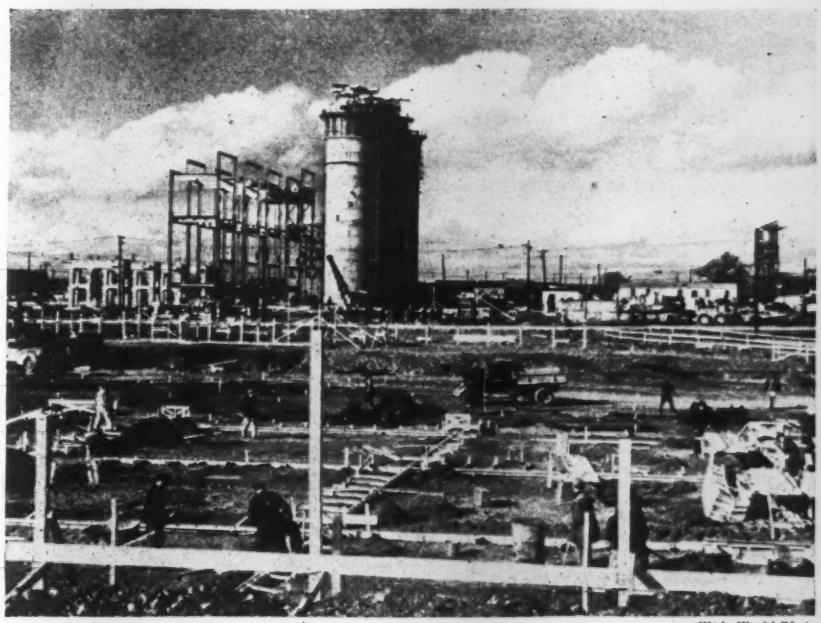
Mississippi road builders paid after court ruling

The Mississippi State Highway Department has released $300,000 due for work completed by highway contractors which had been held up for several months due to litigation instituted by State Tax Collector Carl N. Craig to collect back sales taxes allegedly due on previous highway construction. The release was made possible by refusal of the Mississippi State Supreme Court to consider an appeal from a Hinds County circuit court. The lower court had refused to grant garnishments pending final disposition of writs of attachment sought by Mr. Craig against the funds due the contractors.



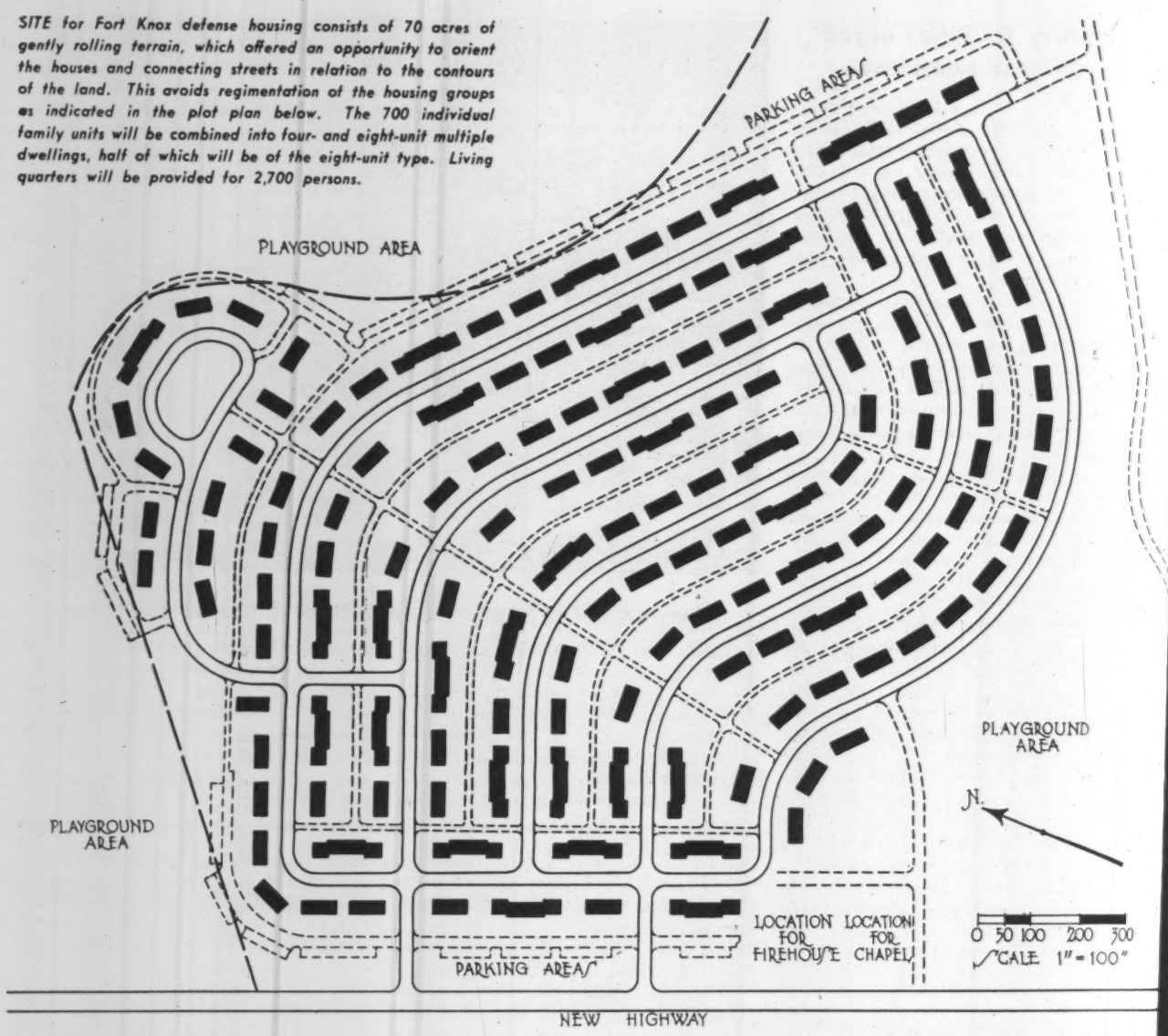
Wide World Photo

Powder plant skyline appears at Charlestown, Ind.

Started as a $25,000,000 national defense project for the War Department, the smokeless powder plant being erected by the E. I. du Pont de Nemours Co., at Charlestown, Ind., 12 mi. north of Louisville, Ky., has now been increased by War Department appropriations to a $75,000,000 project. Six loading lines instead of the original four are included in present plans. The above view shows advancement since work started in July.

With 14,000 workmen on the project construction is moving forward at a rapid rate. It is anticipated that the plant will be ready for operations by next spring. Erection is being done by the du Pont company's own construction organization.

SITE for Fort Knox defense housing consists of 70 acres of gently rolling terrain, which offered an opportunity to orient the houses and connecting streets in relation to the contours of the land. This avoids regimentation of the housing groups as indicated in the plot plan below. The 700 individual family units will be combined into four- and eight-unit multiple dwellings, half of which will be of the eight-unit type. Living quarters will be provided for 2,700 persons.



FWA starts defense housing at Ft. Knox

FIRST MAJOR undertaking in the $45,762,500 defense housing program that the Federal Works Agency is handling for the U. S. Army (*ENR* Nov. 7, 1940, p. 591), is a 700-unit project to accommodate 2,700 persons at Ft. Knox, Ky.

The site consists of 70 acres within the military reservation and is located about three-quarters of a mile from the present civic center of the post. Three-lane service roads will insure ample traffic facilities throughout the area. Adequate parking space has been reserved at two of the site boundaries, and supplemental recreational and playground areas have been reserved within the site. The plan includes locations for a chapel, firehouse and other community buildings, but these structures are not included in the present contract. The slightly rolling terrain afforded an opportunity to orient the houses and connecting streets in relation to the contours of the land, thus avoiding any regimentation of the dwelling groups.

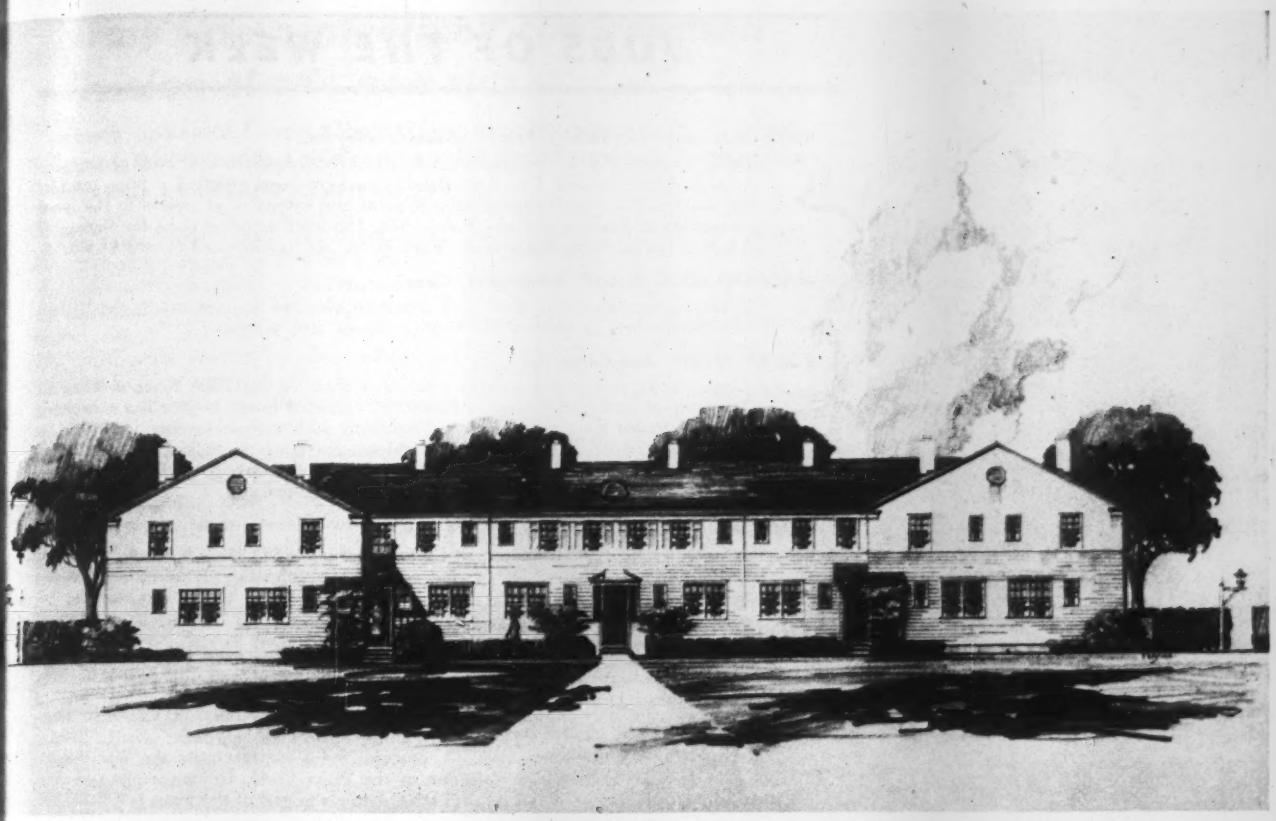
Individual family units will be combined into four- and eight-unit multiple dwellings. About half of the houses will be of the eight-unit type. The design follows that of early colonial tradition. Frame construction will be used throughout, with exterior walls faced in clapboard or ship-lap and roofs of varied color composition shingles.

The plans call for a living room and combination kitchen-dinette on the first floor, where the balance of the space is allotted to a utility room, entrance hall and a stair leading to the second floor.

Approximately 25 percent of the units will have three bedrooms on the second floor, while 75 percent will have only two within a standardized floor area.

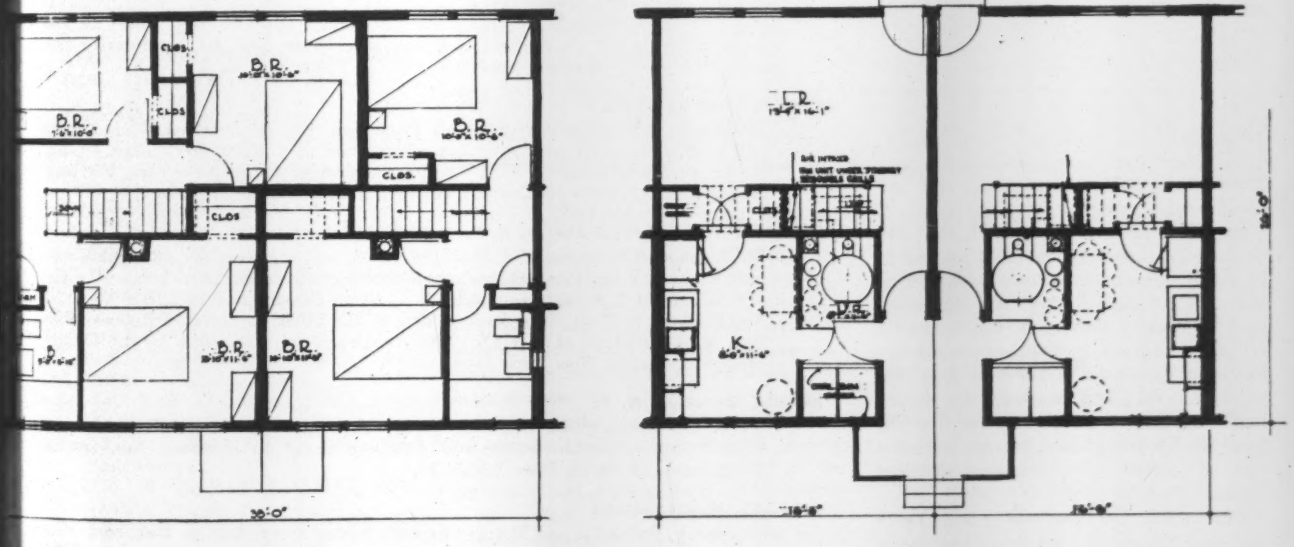
Each unit will be equipped with its own heating plant, consisting of a warm-air coal burning furnace with ducts leading to each room. A gas range and electric refrigerator will also be furnished.

The Fleisher Engineering and Construction Co., Lexington, Ky., has the general contract. Design of the dwellings, site planning, and negotiations with the contractors have been under the direction of Public Buildings Commissioner W. E. Reynolds. Construction work at the site will be supervised by PBA field engineers. The cost of the project is estimated at $1,935,000.



TYPICAL 8-unit multiple dwelling at Fort Knox. Frame construction is used throughout, with exterior walls faced in clapboard or ship-lap. The roof is of composition shingles. This view shows front facade facing the service road.

E FLOOR PLANS below are typical of the central units of the 700 multiple llings at Fort Knox. Living rooms on the first floor face individual gardens at rear of the dwellings.



SECOND FLOOR PLAN

FIRST FLOOR PLAN

New S. Carolina road head

J. Stanley Williamson, chief engineer of the South Carolina Highway Department, has been elected chief highway commissioner for that state to succeed the late Ben M. Sawyer. Mr. Williamson will continue to act as chief engineer until that post is filled.

Mr. Williamson is president of American Association of State Highway officials, and a past president of the South Carolina Society of Engineers. He is a graduate of Clemson College and has been with the highway department in various capacities since 1922, having been elected chief engineer in July, 1935.

Building unions bar strikes and limit initiation fees

Nineteen American Federation of Labor unions in the building and construction trades, representing 1,500,000 workers, this week agreed not to interrupt the national defense program with strikes, according to John P. Coyne, president of the Building and Construction Trades Department of the A.F.L. This followed a similar move by the metal trades unions.

In addition, Mr. Coyne said, that the heads of nineteen unions had agreed to fix a maximum limit on the amount which any union could charge as initiation fees. This, he explained, was taken in reply to charges that unions were demanding unfair initiation fees and that it was not only the first time the unions had fixed such a maximum, but that the limit would probably represent a reduction in initiation fees for some of these unions.

The action described above is in keeping with a recent national convention pledge to cooperate to the fullest extent with the government on the national defense program.

JOBS OF THE WEEK

NAVY SEWAGE TREATMENT PLANT, Jacksonville, Fla.

Duval Engineering & Construction Co., George D. Auchter Co., both of Jacksonville, and Batson-Cook Co., West Point, Ga., have been awarded a joint contract for construction of a sewage treatment plant and extension of sewers to the naval air station at Black and Piney Points, Fla. The work is being done for Bureau of Yards & Docks, Navy Department, Washington, and is estimated to cost $1,400,000.

MACHINE TOOL PLANT, Bridgeport, Conn.

Turner Construction Co., New York, has been awarded the contract by the Bullard Co., Bridgeport, to erect a $3,500,000 machine tool plant.

POWER PLANT, Ambridge, Pa.

Duquesne Light Co. will build a generating plant on the Ohio River in Crescent Township at an estimated cost of $8,000,000. Included in the project is a generating plant of 80,000 kw. capacity; a coal-handling dock with unloading facilities; an outdoor switching station; and a 66,000-volt transformer station. A. G. Butler, Pittsburgh, Pa., is engineer for the company, and Frank R. Phillips, president, will let separate contracts for construction and equipment.

TEMPORARY HOUSING, Fort Bragg, N. C.

War Department, Washington, D. C., has awarded a $13,861,593 contract to T. A. Loving Co., Goldsboro, N. C., for erection of temporary housing and service buildings at Fort Bragg.

AMMUNITION LOADING PLANT, Milan, Tenn.

Procter & Gamble Defense Corp., Cincinnati, Ohio, has been awarded a contract by the War Department for procurement of equipment and supervision services during construction of a $14,000,000 ammunition loading plant.

TNT and DNT PLANT, Sandusky, Ohio.

Trojan Powder Co., Allentown, Pa., has received a contract from the War Department for construction and operation of the Plum Brook Ordnance plant at Sandusky for manufacture of TNT and DNT. Estimated cost of the plant is $10,725,000.

SMOKELESS POWDER PLANT, Charlestown, Ind.

E. I. du Pont de Nemours & Co., Wilmington, Del., has received an additional contract from the War Department for increased manufacturing facilities at the smokeless powder plant now under construction at Charlestown, Ind. The original contract called for an expenditure of $23,000,000. Since that time other contracts have been let bringing the total cost to $74,000,000.

MANUFACTURING PLANT, Farmingdale, N. Y.

Turner Construction Co., New York City, has received contract from the Republic Aviation Corp., to build a one-story manufacturing plant at Farmingdale, N. Y., at a cost of $5,210,513.

AMMONIA PLANT, Henderson, Ky.

Solvay Process Co., subsidiary of Allied Chemical & Dye Co., New York City, has received a $11,132,440 contract from the War Department for construction and operation of an anhydrous ammonia plant at Henderson, Ky.

PLANTS, Louisville, Ky.

Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa., has received contract from Navy Department for operation and construction of a $5,000,000 ordnance plant to be erected at Louisville. J. G. White Engineering Corp., New York, has been awarded a $3,275,000 construction contract from Westinghouse Electric.

ELEVATED HIGHWAY, Brooklyn, N. Y.

B. Turecamo Contracting Co., Brooklyn, N. Y., will construct the pile foundations and viaduct on the Prospect Ave. grade-crossing separation under terms of a $1,395,353 contract. A contract was let to Corbetta Construction Co., New York, for the 62nd St. to Owls Head Park section of the Brooklyn Elevated Highway with this work estimated at $1,178,819. Both contracts were awarded by the Triboro Bridge Authority, New York City.

BRIDGE, Brooklyn, N. Y.

P. T. Cox Construction Co., New York, was awarded a $1,910,501 contract for constructing a bascule bridge over Gowanus Canal on Hamilton Ave. for the Department of Parks, New York City.

AIRBASE, Newfoundland

George A. Fuller Co. and Merritt-Chapman & Scott Corp., both of New York, were awarded the contract for constructing the airbase at Placentia Bay for the Navy Department, Washington, D. C. Estimated cost of the work is $6,000,000.

NOTE—Additional bidding and contract news on over 800 projects large and small appear in the Construction News section beginning on page 14.

Army's de-centralized construction division starts new work

Newly appointed zone constructing quartermasters go to Washington for three-day conference with Col. Somervell to program speed-up of defense construction.

The nine new Zone Constructing Quartermasters appointed by Col. Brehon B. Somervell in an effort to de-centralize the construction division of the Quartermaster Corps (*ENR* Dec. 26, 1940 p. 849) will start setting up their offices next week. It is expected they will employ a considerable number of civilian engineers in so doing—mostly through the civil service, though some specialists will be retained direct. The new quartermasters reported to Maj. Gen. Edmund B. Gregory, Quartermaster General, on Jan. 8, and are now attending a three-day conference with Col. Somervell.

Since he was made head of construction, Col. Somervell has been pushing a job-by-job investigation of factors that have held up the program—and trying to correct each as it is found. No one great difficulty appeared, but the multitude of little troubles discovered seem to point to a general over-centralization. Thus simply because of the volume of mail involved in referring a mass of questions to Washington, a number of cases were found in which important mail had been lost in the Washington office.

More serious was the fact that in the frequent cases in which a change was made in the allocation of troops, cantonment plans had to be pulled back into Washington for re-design, with consequent delay. It is believed that this sort of trouble can be lessened under the new set-up.

ARMY CONSTRUCTION ORGANIZATION—QUARTERMASTER CORPS

Washington headquarters:

Maj. Gen. Edmund B. Gregory, Quartermaster General
Lieut. Col. Brehon B. Somervell, Chief of Construction Division
Lt. Col., W. D. Styer, C.E., Executive Officer
Lt. Col. M. B. Birdseye, Q.M.C., Assistant Executive Officer
Col. L. R. Groves, C.E., Chief, Operations Branch
Capt. C. F. Robinson, C.E, Chief, Control Section
Lt. Col. J. W. Younger, Q.M.C., Chief, Administrative Branch
Col. R. D. Valliant, Q.M.C., Chief, Real Estate Branch
Lt. Col. W. A. Pashley, Q.M.C., Chief, Accounts Branch
Lt. Col. E. H. Leavey, Chief, Engineering Branch

Zone constructing quartermasters are:

1st Zone—Maj. R. G. Richards, Boston.
2nd Zone—Lt. Col. M. A. MacFadden, New York, N. Y.
3rd Zone—Maj. J. H. Burghein, Baltimore, Md.
4th Zone—Col. H. L. Green, Atlanta, Ga.
5th Zone—Maj. B. F. Vandervoort, Columbus, Ohio
6th Zone—Maj. E. C. Hayden, Chicago, Ill.
7th Zone—Maj. M. E. Townes, Omaha, Neb.
8th Zone—Lt. Col. E. V. Dunstan, San Antonio, Texas
9th Zone—Lt. Col. E. M. George, San Francisco, Calif.

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State control for Golden Gate span advocated

Inclusion of the Golden Gate Bridge in the California state highway system so that maintenance charges might be paid out of the gas tax funds will be asked of the 1941 California legislature by the San Francisco delegation in the assembly and senate. The sponsors of this legislation state that their purpose is to secure a lower toll rate on the bridge.

Fairchild Aerial Surveys Photo

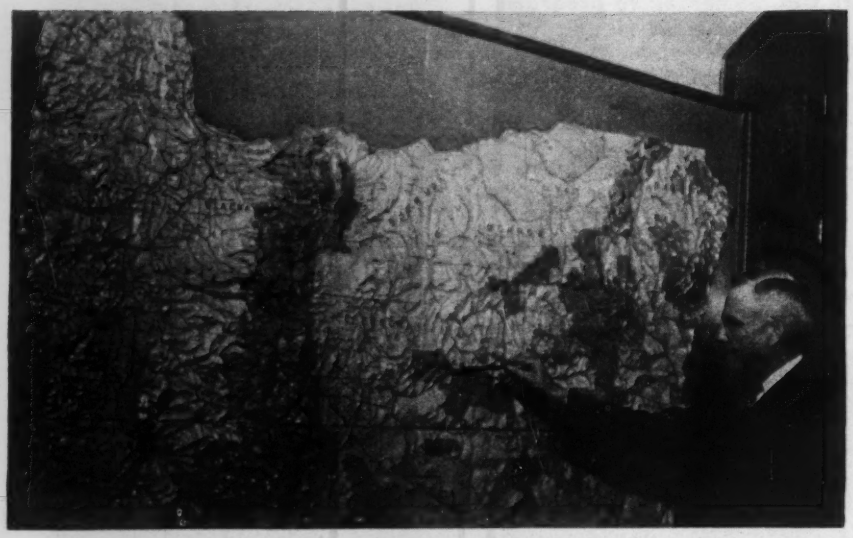
Entire Arroyo Seco Parkway now in service

Portions of the Arroyo Seco Parkway, nonstop highway between Los Angeles and Pasadena, have been put in service as they were completed, but the entire route was first used on Jan. 1 when the Rose Bowl football game traffic, heaviest of the entire year, was accommodated.

Shown in the center foreground is the Figueroa St. bridge across the Los Angeles River, which is at the southern end of the parkway. Leaving the parkway at the bottom of the picture, traffic enters the first of four 4-lane tunnels under Elysian Park hill. These tunnels, not part of the parkway, now constitute the bottleneck for traffic between Los Angeles and Pasadena. However, just started is a series of open cuts through these hills to the west of the present route or at the left in the above picture. When these cuts, which are to have grade separations at principal intersections, are completed the existing route through the tunnels will be used only for north bound traffic while the open cuts will serve south bound vehicles. Completion of the cuts, somewhat dependent upon financing, is expected within two years.

The above view also shows the paved Arroyo Seco channel paralleling the new parkway and the channel's confluence with the Los Angeles River. The main line Southern Pacific tracks parallel the river channel on the far side.

MEN AT WORK



R. H. BALDOCK, Oregon state highway engineer, points out details on a relief map in which relation of the state highway system to topographical features is seen at a glance. The map was made possible by topographical data accumulated through many years by Lewis A. McArthur, secretary of the Oregon Geographic Board. In addition to topography, the map shows highways, railroads, cities, streams, lakes and political subdivisions, thus exactly meeting the requirements in working out the best location for "military routes".

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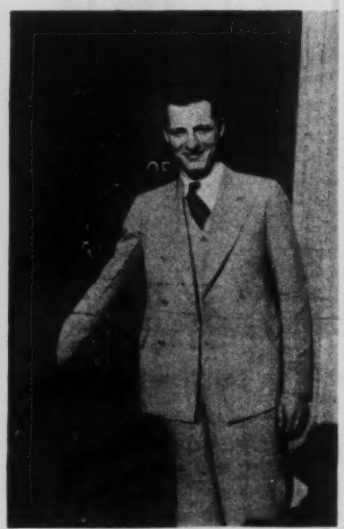
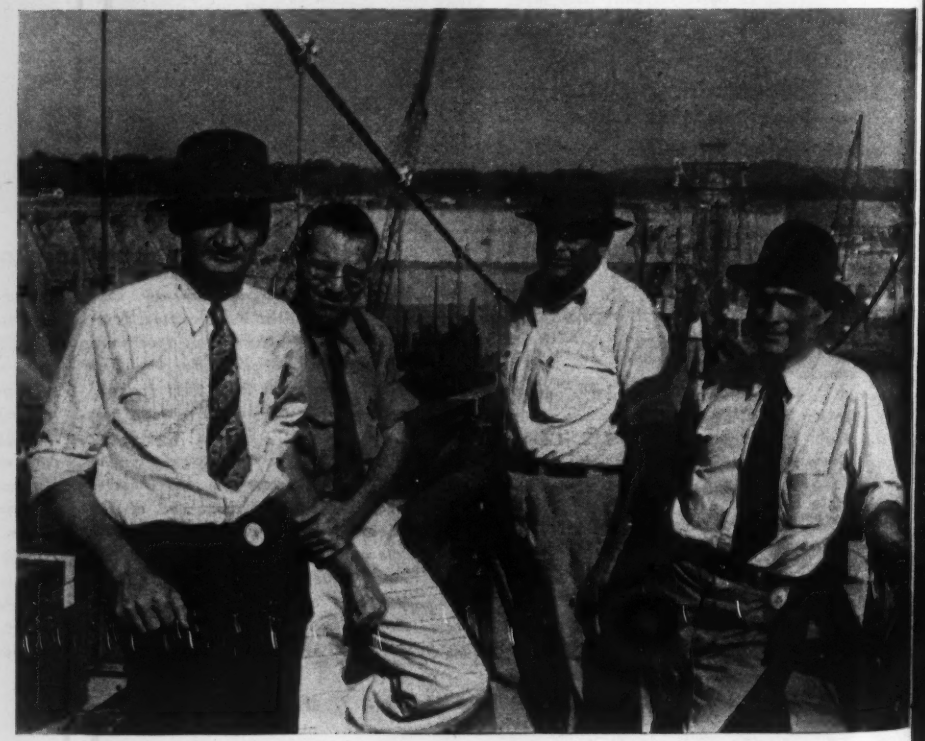


J. L. STRELOW, superintendent of the Davenport, Iowa, sewage disposal plant, which comprises preliminary settling tanks with slat scrapers, a digestion tank and a globe-shaped steel tank for gas holder. The plant put in service last spring was designed by Consoer, Townsend & Quinlan, Chicago. Strelow turns from the camera to enter a headhouse in which are located the laboratory, screen and sludge filtering facilities.

Snapped on the suspension foot-bridge at Watts Bar Dam of TVA are, left to right, FRANK BELL, TVA construction engineer on the steam plant; TOM EVANS, engineer, U. S. Engineers; G. ROZENDALE, field engineer, and OREN REED, construction engineer on the dam.



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The new lug cut brick used in paving the approach ramp to the Midtown Highway in Borough of Queens, New York City, forms the foundation for this picture. Left to right the men are: HANS JACOBSEN, superintendent of Corbetta Construction Co., New York contractors for the concrete structure; W. L. BARR, secretary-treasurer of the Metropolitan Paving Brick Co., Canton, Ohio; and WM. STUTZ, contractor for the brick paving, Bronx, N. Y.

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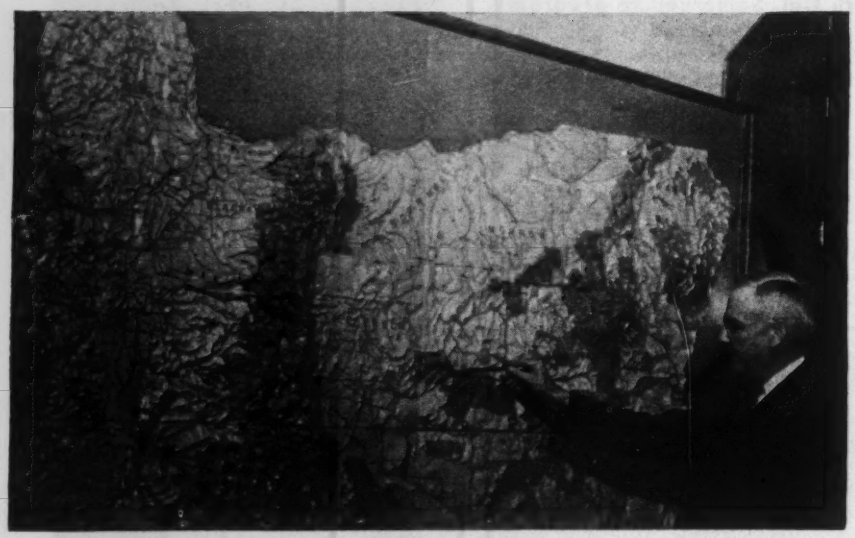
Taking time out as construction engineer for the Bureau of Reclamation on Green Mountain Dam on the Blue River in Colorado, R. B. WARD (above) has a smoke. Ward's comfortable office is located on one of those Colorado mountain streams that a lot of his fishing-minded fellow engineers pay good money to visit. However, he claims he can't worry much about fishing until some four million cubic yards of earth and rock have been placed in the dam.

MEN AT WORK



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MEN AND JOBS

MAJ. R. G. LOVETT, U. S. Engineers, has been assigned to duty at Jamaica, West Indies, where he will serve as district engineer in the establishment of defense bases. He will be assisted by CAPT. CLARENCE C. HAUG, who had been serving as assistant to Major Lovett in the New Orleans territory. Among the civilian engineers from New Orleans who are to aid Major Lovett at Jamaica are: S. A. BICHET, LEO ODOM, CHARLES CAPLINGER, VIRGIL SMITH, STERLING KNIGHT, D. B. IVEY, FELIX GUILBEAU, and H. C. CUNNINGHAM.

S. C. HOLLISTER, dean of the college of engineering at Cornell University, has been appointed regional adviser for the State of New York outside of New York City on the new national program for engineering defense training.

RONALD B. BECKER, former resident engineer for PWA in Oklahoma City, Okla., has been appointed assistant engineer on the construction of the cantonment now being erected at Fort Sill, Okla.

CAPT. NELS FARDAHL, Little Rock, Ark., civilian engineer in the Little Rock district, U. S. Engineers, has been ordered to duty at Randolph Field, Tex. Capt. Fardahl before serving at Little Rock was with the U. S. Engineers in St. Paul and spent three years with the CCC as an administrative officer. He holds a reserve commission.

RAYMOND CLARK, chief deputy in the office of County Engineer RUSSELL HARVEY, Canton, Ohio, has been engaged as chief engineer of surveying for the United States Army Atlas powder plant construction near Ravenna, Ohio.

HARVEY R. WENDORF, engineer for the Milwaukee County Regional Planning Department, Milwaukee, Wis., Jan. 2 began new duties as civil engineer for the Civil Aeronautics Authority at Washington.

W. L. SAGAR, assistant professor of civil engineering, and W. BONUS, an engineer on the staff of the university building superintendent, both of the University of Toronto, have been granted leave of absence for the duration of the war. Both men are now serving as officers with the 1st Brigade of the Canadian Armoured Corps and are stationed at Camp Borden, Toronto.

S. S. STEINBERG, dean of the engineering school, University of Maryland, has been appointed chairman of the Water Resources Commission, state of Maryland. Dr. Steinberg succeeds ABEL WOLMAN. PHILIP B. PERLMAN has resigned from the Commission and HARRY R. HALL, chief engineer of the Washington Suburban Sanitary Commission, has been named to fill the vacancy.

H. G. JACOBS has resigned as chief engineer, Zone 2, Federal Housing Administration, Atlanta, Ga., to become chief engineer of the Newbold Development Co., Atlanta and Washington.

W. M. PIATT, consulting engineer, Durham, N. C., is now associated with W. S. Lee Engineering Co., Charlotte. He will work on the $9,000,000 anti-aircraft base to be built by the U. S. Army at Holly Ridge, N. C. J. A. STEWMAN, JR., will be in charge of the project and P. D. DAVIS in charge of engineering design. Representing the U. S. Army will be LIEUT. COL. ALBERT MONTGOMERY, construction quartermaster, LIEUT. ALDEN E. SPEES and LIEUT. WILBUR H. TURNER of the Quartermaster Corps.

ANDREW GUTIERREZ, chemist, has accepted a position with the city water department at Durham, N. C., in the office of ROBERT S. PHILLIPS, chief chemist. He will serve for a year in the absence of LOUIS LUBOW, who has been called into active army service. Gutierrez is a graduate of the University of North Carolina, school of engineering.

CHARLES H. GARRIS, federal-aid engineer of the North Carolina Highway and Public Works Commission, has resigned, effective Feb. 13, to become associated with the Harwood Beebe Engineering Co., Spartanburg, S. C., as chief draftsman. With the exception of a five-year period beginning, 1929, Garris has been connected with the North Carolina Highway Commission since 1920.

MAJ. VIVIAN N. SCOTT, for 21 years with the Los Angeles city engineering department, has been appointed to an executive post with the U. S. Army with headquarters in Sacramento, Calif. Maj. Scott is a veteran of the World War and was one of the first radio advance communication men in the service. He has been examining officer for the 242nd Reserve Engineers for the past five years.

LIEUT. COL. BRENTON G. WALLACE has been promoted to the rank of colonel in command of the 166th Field Artillery, Pennsylvania National Guard. He will be stationed at Camp Shelby, Miss. Col. Wallace is a Philadelphia architect and was commissioned a lieutenant during the World War and served overseas for 14 months with the 107th Field Artillery.

GEORGE W. JONES, road commissioner of Los Angeles County, Calif., for the past 21 years and an employee of the county surveyors office for ten years was retired on Jan. 1. O. F. COOLEY, assistant to Jones, has been appointed as acting commissioner.

JOHN H. ZELL has been appointed director of aeronautics at Marshall College, Huntington, W. Va., and as coordinator of the Civil Pilot Training Program. He will be actively engaged in teaching technical reports and hydraulics. Zell joined the U. S. Engineers department in 1929 and in Nov., 1935, was transferred to Hinton, W. Va., to work on the Bluestone reservoir project on New River. He was transferred to the Huntington office in June, 1936, where he served until Dec. 4, 1940.

LEROY ARNOLD, county engineer Wyandotte County, Kans., for the past eight years, has resigned to accept a civil service appointment with the U. S. Engineer Corps. He has been assigned to the constructing quartermaster at Fort Leavenworth.

E. ANDREW HILDEBRAND, engineering graduate of Southern Methodist University, Dallas, has been added to the faculty of that institution to teach engineering drawing in the new school for national defense.

CAPT. NORMAN MATTHIAS, former chief of the engineering division, U. S. Engineers office, and GEORGE ARCHIBALD, chief of the flood control division, Los Angeles, Calif., have been transferred to the U. S. defense base at Trinidad in the West Indies.

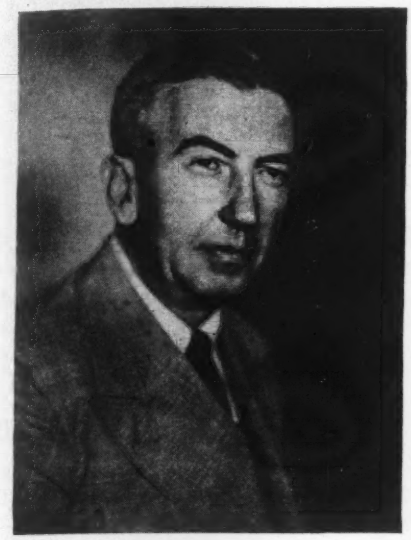
NELSON G. FASNACHT, engineer of Canton, Ohio, has been promoted to chief of the inspection division of the Cincinnati district office of the U. S. Engineers. He succeeds MAJOR R. D. SALISBURY, who has been assigned to active duty at Fort Hayes, Columbus. Fasnacht has been serving as resident engineer in charge of construction of the $6,000,000 flood-control project at Portsmouth.

LIEUT. COL. READING WILKINSON, district engineer at Charleston, S. C., for the U. S. Engineers, has been named corps supervisor for the new army air corps base to be constructed at Charlotte. Col. Wilkinson will be succeeded by COL. W. P. LADUE, who has been recalled to active duty.

R. H. EDDY, superintendent of bridges for Lancaster County, Neb., for the past seven years, has been appointed engineer for Gage County, Neb., with headquarters at Beatrice.

Penn Turnpike engineers begin new work

Samuel W. Marshall, chief engineer, of the Pennsylvania Turnpike Commission, resigned Dec. 31, to assume new duties as chief engineer for Caribbean Architects & Engineers. This firm is a partnership composed of Voorhees, Walker, Foley & Smith, New York architects, and Parsons, Klapp, Brinckerhoff, & Douglas, consulting engineers of New York. The new organization was recently formed to handle the designing of defense bases in Trinidad, British Guiana, Antiqua and St. Lucia for the U. S. Engineers. Mr. Marshall, will have his headquarters in New York.



Samuel W. Marshall

Other engineers who have recently left the commission since the tapering off of work on the turnpike this spring include the following: I. L. Tyler, chief materials engineer, is now with the Portland Cement Association, Chicago, as division technician; Richard Graef, chief bridge engineer, is project engineer at Edgewood Arsenal for Whitman, Requardt & Smith, Baltimore, Md.; Hershey Miller, assistant materials engineer, has joined the National Crushed Stone Association, acting as engineer and technician; Fred S. Poorman, assistant chief engineer, and F. Sellinow are now in the office of the Quartermaster General at Washington; Gerald R. Tyler, chief architect, and Howard Nordby, architect, are on active duty in the Quartermaster Corps at Pine Camp, Great Bend, N. Y.; Joseph Gehrlein is associated with Gannett, Eastman & Fleming, Inc., Harrisburg, Pa. on work at the Indiantown Gap, Pa., army training camp; John D. Cooper is working as a construction engineer in Chile, S. A.; James Darling, highway engineer, is serving with the U. S. Engineers on the Panama Canal in a civilian capacity; Edward S. Thompson is with Ferguson & Edmondson Co., Pittsburgh; F. E. Læmphere has returned to the Reconstruction Finance Corporation in the Dayton, Ohio office; and Don Williams, plans engineer, is city engineer at Corry, Pa.

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Engineering Council no longer active

The American Engineering Council ceased to function on Dec. 31. The organization technically remains in existence and will maintain its office and the services of its executive secretary, Col. L. B. Lent, until the end of this month in order to wind up its affairs; certain committees which can act without funds will continue to function.

The end of the council came as a result of the failure of the American Society of Civil Engineers to reconsider its July decision to withdraw its support. The mechanical and electrical engineers decided to withdraw if Am.Soc. C.E. did. A formal resolution winding up the affairs of the council was adopted by the executive committee last month and approved by letter ballot by the assembly. It is intended to store the records of the council with the Carnegie Institution of Washington, and to return proportionately to contributors any funds on hand.

An effort is being made to find funds with which to continue the work of the council's committee on inter-American relations; this committee has been cooperating with the State Department's division of cultural relations. The committee on engineering ethics, under Dr. Dougald C. Jackson of M.I.T., needs no funds and will continue its work. Similarly Dean A. A. Potter's committee which works with the publishers of *Who's Who in Engineering* will continue.

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National defense housing well under way

Defense Housing Coordinator C. F. Palmer of the National Defense Advisory Commission reports that 27,700 federally financed defense dwelling units are now under way. A nation-wide survey shows that federal defense housing agencies whose programs are being carried on in cooperation with the defense housing coordinator are rapidly going ahead.

Of the 27,700 dwellings being erected in 29 states, the Navy is building 15,800; the Public Buildings Administration, under the Federal Works Administration, 6,800 units and the U. S. Housing Authority, with local housing authorities, 5,100 dwellings.

Some 6,000 of these dwellings are being erected to house civilian employees in private industry, while 4,250 will accommodate civilian employees in government arsenals, navy yards, etc. The remainder are divided among civilian and army and navy personnel.

The first 50,000 dwelling units will be ready for occupancy during the early part of 1941. It is anticipated that the number of houses under construction and completed will total at least 100,000 by March.

Preston retires from Bureau of Reclamation

Porter J. Preston, 70, supervising engineer on the Bureau of Reclamation Colorado-Big Thompson diversion project, retired Dec. 31 after 25 years of continuous service with the bureau. Mr. Preston, an outstanding irrigation engineer whose work has covered the western third of the United States, was appointed head of the diversion project by Secretary of the Interior Harold Ickes in September, 1938. It was primarily through Preston's investigation of irrigation possibilities in the Colorado River Valley in 1935 that the project has become a reality.

Mr. Preston's work as an irrigation engineer dates from 1892, when he was graduated from Colorado State College with a degree of bachelor of science. After doing survey work within the state of Colorado for the next two years, he became superintendent of the Fort Lyons Canal Co. where he stayed for five years. This was followed by a two-year term as Colorado deputy state engineer. After four years of consulting work, he was retained by the Bureau of Reclamation.

Work for the bureau included preliminary investigation of the All-American Canal, Uncompahgre project and the Yakima project in Washington. From 1930 until his retirement Mr. Preston was in charge of Colorado River investigations. He is president of the Colorado Society of Engineers. Shortly after the first of the year he intends opening a consulting practice in Denver.

OBITUARY

GEORGE S. FANNING, 55, chief engineer of the Erie R. R., died Jan. 2 at Cleveland, Ohio. He was serving as president of the American Railway Engineering Association at the time of his death. Mr. Fanning was a graduate of the University of Michigan. Following graduation he joined the engineering staff of the Michigan Central R. R., but in 1913 went to the Erie as a resident engineer, becoming chief engineer in 1929.

HENRY J. HORN, 76, former vice-president of the New York, New Haven & Hartford Ry., died at his home in Brookline, Mass. Dec. 29. He was at one time assistant civil engineer for the Chicago Great Western Ry., general manager of the Northern Pacific in charge of operation and maintenance, assistant general manager on the Burlington line west of the Missouri River, and on the engineering staff of the Chicago, St. Paul & Kansas City Ry.

IRA C. MILLER, 66, former superintendent of the municipal water plant at Connersville, Ind., died Dec. 30. Mr. Miller had also served as engineer with the Rex Mfg. Co.

R. E. GURLEY, 82, of Houston, Tex., died Dec. 31. He was former county engineer of Fort Bend County and for many years was consulting engineer for several railways. He was senior member of the firm of Gurley & Gurley, consulting engineers at Houston.

ALEXANDER E. HENRY, 99, former construction superintendent for the Missouri Pacific Ry., died Dec. 31, at East Orange, N. J.

FRANK V. KIEBERT, 73, engineer of Oliver County, N. D., died recently at Center, N. D.

THOMAS A. HAYDEN, 60, died at Phoenix, Ariz., Dec. 23. Mr. Hayden was connected with the Salt River Valley Water Users Association's engineering department for many years. He was at one time city engineer for Santa Fe, N. M.

HENRY P. ROLFE, 64, died in Topeka, Kan. Dec. 23. He served as valuation engineer of the Santa Fe Ry. for 12 years.

FRANK BENEDICT, 57, construction engineer for 33 years for the New York Central R. R., was killed Dec. 23 in the Collinwood, Ohio railroad yards.

GEORGE R. WELCH of Villa Park, Ill., died Dec. 4 in Aurora. He was engineer on the Panama Canal work for three years following graduation from the University of Illinois in 1910.

MAJ. W. R. RICHARDS of the U. S. Army Engineering Corps, who laid the pipeline for the Tomhannock reservoir, major water supply source for Troy, N. Y., died at his home in Alexandria, Pa., Dec. 21.

FRED BUTLER, 50, chief engineer for Kingan & Co., died recently at his home at Indianapolis, Ind. He was a graduate of Purdue University in 1914.

WILLIAM RANDOLPH RICHARDS, 62, assistant treasurer, Bureau of Contract Information, Inc., Washington, D. C., died Dec. 22. For many years he was associated with the engineering departments of both the Pennsylvania and the Louisville and Nashville railroads. Resigning from the army in 1920, he joined the Associated General Contractors of America, having served with this organization until 1933.

DECKER FANNIN WALKER, SR., 77, who supervised construction of the Norfolk & Western R. R. through West Virginia to Tidewater, Va., died Dec. 20. Walker built many railroad bridges and tunnels in the United States, Central America, and South America.

KENNETH C. WRIGHT, 49, one of the most prominent road and highway engineers in the West, died Dec. 22 at Salt Lake City. For the past three years Mr. Wright had been manager of the industrial equipment division of the Lang Company.

CONTRACTS AND CAPITAL

ENGINEERING CONSTRUCTION awards for the week total $157,823,000, the third highest weekly volume reported since the defense program began last July, and 145 per cent higher than the corresponding 1940 week.

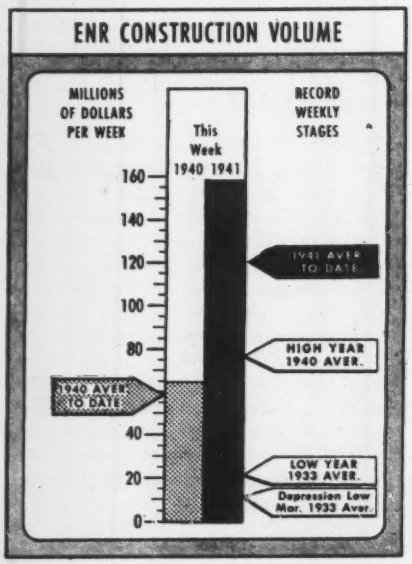
Private awards for the week are 119 per cent above a year ago due to the increased volume of industrial building; and public construction tops the 1940 week by 154 per cent as a result of the high volume of public buildings.

Construction volume for the two weeks of 1941, $240,367,000, is 104 per cent above the period last year. Private work is 76 per cent higher, and public construction gains 117 per cent due to the 795 per cent increase in federal work.

In the classified construction groups, gains over the short preceding week are in waterworks, sewerage, bridges, industrial, commercial and public buildings, and streets and roads; and increases over a year ago are in sewerage, bridges, and industrial, commercial and public buildings.

New capital for construction purposes for the week totals $13,232,000, an increase of 9 per cent over the volume for the corresponding 1940 week. The current week's financing is made up of $9,916,000 in state and municipal bond sales, and $3,316,000 in corporate security issues.

New construction financing for the two weeks of 1941, $33,230,000, is 47 per cent lower than in the initial two-week period last year.



CONTRACTS

(Thousands of dollars)

	Week Ending Jan. 11 1940	Jan. 2 1941	Jan. 9 1941
Federal	$8,402	$29,703	$88,285
State & Municipal	40,385	21,446	35,354
Total public	$48,787	$51,149	$123,639
Total private	15,591	31,395	34,184
TOTALS	$64,378	$82,544	$157,823
Cumulative 1941	(2 weeks)		$240,367
1940	(2 weeks)		$117,838

Note: Minimum size projects included are: Waterworks and waterways projects, 15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

NEW PRODUCTIVE CAPITAL

	Cumulative 1940 2 weeks	1941 2 weeks
NON-FEDERAL	$62,410	$33,230
Corp. Securities	8,245	4,618
State & Mun.	8,966	14,949
U.S.H.A. loans	.....	12,043
R.F.C. loans	45,199	1,620
FEDERAL	.....	.....
TOTAL CAPITAL	$62,410	$33,230

FHA MORTGAGES

	Week Ending Dec. 6 1940	Dec. 28 1940	Jan. 4 1941
Selected for appraisal	$14,153	$11,825	$12,997*
Cumulative 1941	(1 week)		$12,997*
1940	(1 week)		$14,153

* Subject to revision.

ENR INDEX NUMBERS

Index Base=100		1913	1926
Construction Cost	Jan. '41	249.69	120.03
Building Cost	Jan. '41	207.94	112.46
Volume	Dec. '40	344	151

CONTRACT UNIT PRICES

What contractors are bidding on different kinds of construction work

COOPER RIVER TAIL CANAL SOUTH CAROLINA

OWNER: South Carolina Public Service Auth., Santee-Cooper Project, Charleston. Harza Engr. Co., Charleston, engineers.

PROJECT: Canal excavation and dredging west branch of Cooper River to depth of 14 to 25 feet, and Tail Canal 15 to 25 feet, with channel width of 300 feet for both. Work located in Berkeley County, near Pinopolis, S. C. Involves construction of field and storm drainage structures; piers; and raising and rebuilding of landings and boat houses.

CONDITIONS: Contractors to furnish all materials and complete work in 365 days. Rail and highway transportation facilities available. Wage rates are: skilled labor, $1.00 to $1.50 per hr.; semi-skilled, 50c. to $1.00; common labor 40c.

BIDS: Five bids were received on Schedule 1-a, the canal cut from the power plant through S.C. Highway No. 179, ranging from the contract low of $747,050 to $943,810. Engineer's estimate, $874,610. On Schedule 2, the canal cut from S.C. Highway 179 to West Branch of Cooper River, two bids were received December 12, 1940, the low of $395,155 and $422,140. Engineer's estimate, $432,150. Schedule 3—canal cut and drainage structures along West Branch of Cooper River, two bids were received, the low, $2,327,450 and $2,413,900. Engineer's estimate, $1,940,100. Alternate bids were accepted.

Schedule 1-a—Power plant through Highway 179

LIST OF BIDDERS:

1. Atlantic Dredging & Constr. Co., Washington, N. C. ... $747,050
2. J. A. Terteling & Sons, Boise, Idaho ... 822,900
3. Robert Lee, Inc., Myrtle Beach, S. C ... 832,000
4. The Arundel Corp., Baltimore, Md. ... 938,500
5. W. E. Callahan Constr. Co., Dallas, Tex ... 943,810

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Clearing	260 ac.	$225.00	$165.00	$135.00
2. Clearing, railroad by-pass	10 ac.	225.00	165.00	135.00
3. Drill holes	200 l. f.	5.00	3.00	3.00
4. Auger holes	500 l. f.	2.00	2.00	2.00
5. Canal excavation	4,000,000 c. y.	.16	.184	.19
6. Stripping for railroad by-pass fill	9,000 c. y.	.20	.25	.15
7. Sand drain	L.S.	8,000.00	4,000.00	5,000.00
8. Railroad by-pass fill	115,000 c. y.	.30	.30	.24

Schedule 2—Highway 179 to West Branch Cooper River

LIST OF BIDDERS:

1. J. A. Terteling & Sons, Boise, Idaho ... $395,155
2. W. E. Callahan Constr. Co., Dallas, Tex ... 422,140

Item	Quan.	Unit Prices (1)	(2)	(3)*
1. Clearing	207 ac.	$165.00	$200.00	$150.00
2. Drill holes	200 l. f.	3.00	2.00	3.30
3. Auger holes	200 l. f.	2.00	1.70	2.20
4. Canal excavation	2,000,000 c. y.	.18	.19	.20

* Engineer's estimate.

Schedule 3—West Branch Cooper River

LIST OF BIDDERS:

1. McWilliams Dredging Co., New Orleans, La ... $2,327,450
2. Hill Dredging Co., Ventnor, N. J ... 2,413,900

Item	Quan.	Unit Prices (1)	(2)	(3)*
1. Clearing	380 ac.	$125.00	$125.00	$150.00
2. Drill holes	1,000 l. f.	7.00	6.00	3.30
3. Auger holes	2,000 l. f.	5.00	4.00	2.20
4. Borrow, levees above Sta. 410	460,000 c. y.	.30	.32	.30
5. Borrow, levees below Sta. 410	590,000 c. y.	.30	.32	.30
6. †Imported borrow, levees below Sta. 410	470,000 c. y.	.....	.....	.50
7. Sheeted walls	2,000 l. f.	25.00	22.00	4.50
8. Supplemental borrow	40,000 c. y.	1.55	1.75	.75
9. Excavation	7,500,000 c. y.	.183	.19	.16
10. 36-in. single pipe, 2-type C gates	37 ea.	5,300.00	5,000.00	2,500.00
11. 42-in. single pipe, 2-type C gates	7 ea.	5,700.00	5,500.00	3,100.00
12. 48-in. single pipe, 2-type C gates	4 ea.	6,300.00	6,000.00	3,600.00
13. 48-in. single pipe, 1-type C gates	2 ea.	4,800.00	4,500.00	3,300.00
14. 48-in. single pipe, 1-type A gates	3 ea.	4,250.00	4,000.00	3,000.00
15. 60-in. single pipe, 1-type C gates	1 ea.	7,000.00	6,800.00	3,300.00
16. 60-in. single pipe, 2-type C gates	2 ea.	9,600.00	9,000.00	6,600.00
17. 72-in. double pipe, 1-type C and 1-type A gate	1 ea.	10,100.00	9,500.00	8,300.00
18. 84-in. single pipe, 1-type A gate	1 ea.	7,600.00	8,000.00	5,400.00
19. 84-in. double pipe, 2-type A gate	1 ea.	10,900.00	14,500.00	10,000.00
20. 84-in. triple pipe, 3-type C gate	1 ea.	15,200.00	20,000.00	15,000.00
21. 84-in. sextuple pipe, 6-type A gate	1 ea.	19,300.00	30,500.00	24,000.00
22. 84-in. sextuple pipe, 6-type C gate	1 ea.	25,700.00	37,000.00	25,000.00
23. †Conc. struct. with 3-60-in. sq. type C gate	1 ea.	.....	.....	15,000.00
24. †Conc. struct. with 4-72-in. sq. type A gate	1 ea.	.....	.....	24,000.00
25. †Conc. struct. with 4-72-in. sq. type C gate	1 ea.	.....	.....	25,000.00
26. Comb., 1-84-in. pipe and 1-type A gate with 2-60-in. pipe and 2-type C gates	1 ea.	13,300.00	18,000.00	12,000.00
27. Raise and rebuild boat houses and landings	L.S.	8,600.00	8,600.00	8,000.00
28. Piers	5 ea.	800.00	2,000.00	2,000.00
29. Passages through Seaboard Bridge	L.S.	30,000.00	20,000.00	40,000.00
30. Mulberry Garden Wall	L.S.	9,000.00	8,000.00	3,000.00

* Engineer's estimate. † Alternate.

BRIDGE, NEW HAMPSHIRE

OWNER: New Hampshire State Highway Dept., Concord.

PROJECT: Construction of 400-ft. 3-span continuous plate girder bridge and approaches over Sagamore Creek in Portsmouth, N. H. Work involves removing existing sub- and superstructure, and removing abandoned roadway surface. Bridge floor and sidewalk floor to be of open steel grid.

CONDITIONS: Tide conditions in creek may increase costs. Contractor to furnish all materials. Rail, highway and water transportation facilities available. Minimum wage rates specified are: skilled labor, 75c. per hr.; semi-skilled, 50c.; and common labor, 40c. per hr.

BIDS: Ten bids were opened December 5, 1940, ranging from the contract low of $110,059 to $139,617.

LIST OF BIDDERS:

1. O. W. Miller Co., Inc., Ludlow, Mass. (contract) ... $110,059
2. W. W. Wyman, Inc., Shelburne Falls, Mass ... 119,523
3. Harry R. Lee, Manchester, N. H ... 123,728
4. Engineering Service & Constr. Co., Boston, Mass ... 125,184
5. J. J. Callahan, Dorchester, Mass ... 128,446
6. John Iafolla Constr. Co., Dedham, Mass. ... 129,343
7. Ellis C. Snodgrass, Portland, Me ... 129,363
8. Charter Oak Constr. Co., Inc., Hartford, Conn ... 130,000
9. Wyman & Simpson, Inc., Augusta, Me ... 139,616
10. Vulcan Constr. Co., Boston, Mass ... Informal

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Removing trees	2 ea.	$10.00	$20.00	$10.00
2. Remove aband. rd. surface	580 s. y.	.10	.15	.10
3. Earth excavation	579 c. y.	.35	.60	.50
4. Ledge excavation	3,013 c. y.	2.50	1.60	1.50
5. Unclass. trench excav	33 c. y.	3.00	4.00	4.00
6. Unclass. structur. excav	986 c. y.	9.00	7.00	17.50
7. Earth borrow	4,807 c. y.	.35	.70	.30
8. Fine grading	7,210 s. y.	.02	.05	.03
9. Gravel borrow base crse	1,600 c. y.	.45	.80	.50
10. Gravel surface course	550 c. y.	.45	1.00	1.00
11. Cl. A. bit. surf. treatment	2,788 gal.	.13	.12	.15
12. Remove superstructure	1 ea.	750.00	800.00	1,000.00
13. Remove substructure	360 c. y.	1.20	1.50	2.00
14. Concrete, Cl. A	614 c. y.	14.75	20.00	18.00
15. Reinforcing steel	44,037 lb.	.05	.05	.05
16. Structural steel	661,000 lb.	.0666	.08	.0757
17. Dry rubble masonry	27 c. y.	10.00	6.00	5.00
18. 15-in. rein. concrete pipe	70 l. f.	2.00	1.60	1.75
19. Bridge railing, type E	784 l. f.	5.00	5.00	5.04
20. Curved granite curbing	128 l. f.	1.80	2.00	2.00
21. Cable guard rail (wood posts)	936 l. f.	.40	.60	.35
22. Anchorages	4 ea.	9.00	10.00	10.00
23. Drop inlets, type B	1 ea.	50.00	50.00	60.00
24. Maintain traffic	L.S.	900.00	700.00	500.00
25. Open steel grid bridge. floor	10,281 s. f.	1.77	1.60	1.79
26. Open steel grid sidewk. floor	2,220 s. f.	2.25	1.65	2.19
27. Bridge shoes	L.S.	1,372.00	2,200.00	1,455.00
28. Wr. iron protect. plates	26,400 lb.	.12	.17	.11

CONSTRUCTION REPORTS

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York
ELSIE EAVES, Manager *SCOTT McLEOD, Statistician*
(Daily service also available—Write for details)

Location of ENR Correspondents

Symbols and Abbreviations Include:

♦ Federal Government
★ Project of $500,000 or over
ENR Engineering News-Record
CD Engineering News-Record Construction Daily

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger; water supply, earthwork, waterworks, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

Classes of Construction

(Named in order of Listing)

Water Supply	Unclassified
Sewers, Waste Disposal	Latin America
Bridges, Grade Cross'gs	Public Buildings
Streets & Roads	Commercial Buildings
Earthwork, Waterways	Industrial Buildings

Stages Reported

PROPOSED: (except Streets & Roads):

BIDS ASKED (new announcements only. For full calendar, see also preceding issues of ENR);

LOW BIDDERS: All low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

WATER SUPPLY

PROPOSED WORK

Calif., Fresno—Billings & Fone, Fresno, water sys., sewers, etc. 100 acre tract. Over $30,000.

Calif., Kingsburg—$33,000 bond election Feb. 4, exten. WW and sewerage sys. CD 10/29—ENR 10/31.

Fla., Miami—L. L. Lee, city mgr., replacing 30 in. wood stave water main with c. i. mains along N. W. 36 St. Over $15,000.

Mo., Blue Springs—Jackson Co. Pub. Water Dist. 8, E. C. Adams, chn. Bd., voted $91,000 bonds, water supply pipe lines. $230,000. Henrici-Lowry Co., 114 W. 10 St., Kansas City, Mo., engrs. CD 11/6—ENR 11/14.

Mo., Oakville (St. Louis County)—St. Louis County Water Supply Dist., c/o W. J. Becker, atty., 50 S. Central Ave., Clayton, St. Louis, water distr. sys. to serve about 600 homes in Oakville and Point school districts of St. Louis Co. Over $15,000. Incorporation of district ratified by vote of residents of district.

N. J., Elizabeth—New fire hydrants, shut off gates, stone drains around existing fire hydrants, various streets. $50,041. WPA. J. H. Weitzen, Smith and Hobart Sts., Perth Amboy, owners and WPA engr.

N. Y., Rochester—Bd. Supervs. Monroe Co., water sys. for Powder Mill Park. Over $15,000.

N. C., Burlington—$123,000 bond election Feb. 4, imprv. water sys. Federal funds $11,000. A. C. Linberg, city engr.

O., Canton—Timken Roller Bearing Co., 1835 Dueber Ave. S.W., 200,000 gal. water tank. $30,000.

O., Hunting Valley—Daisy Hill Co., c/o Union Properties Co., c/o A. Findlay, in charge, Union Commercial Bldg., Cleveland, 7,900 ft. water line to Daisy Hill Allotment. $35,000. F. A. Pease Eng. Co., Terminal Tower, Cleveland, engrs.

Ore., Portland—Sylvan Water Dist., imprv. distr. lines. $35,000. WPA labor sought. U. Ernest Nelson. Railway Exch. Bldg., engr.

Tex., Grand Prairie—Langford Waterworks, Inc., C. E. Langford, pres., Grand Prairie, exten. water sys., c. i. mains, etc., into areas created by National Defense plants, etc. $30,000.

Wash., Marysville—Clearing, grubbing at water department headworks. Seeking $21,996 WPA allot. for labor.

Wash., Zenith—King County Water Dists. 54 and 56, bids in spring intertie water sys. between Des Moines and Redondo. $100,000. Parker & Hill, Smith Tower, Seattle, engrs.

Wis., Cudahy—J. F. Keller, city clk., surveys imprv. water plant, filtration plant. Consoer, Townsend & Quinlan, 211 W. Wacker Dr., Chicago, Ill., engrs.

Ont., Dresden—E. J. Kyle, municipality clk., watermain extens.

BIDS ASKED

Bids Asked January 14

N. Y., New York—Comr. Water Supply, Gas & Electricity, Municipal Bldg., 12 in. c.i. watermains, appurtenances, across Eastchester Creek, Boston Rd. and across Long Island Sound from Fordham St., City Island to 3 St., Hart Island, Bronx Boro. Extended date. CD 12/27—ENR 1/2.

Bids Asked

Pa., Allentown—G. W. Kistler, city clk., laying c.i. watermains, appurtenances, during 1941. Over $15,000. E. Meckley, city engr.

Que., Quebec City—City clerk, two 48 in. rein.-con. mains under St. Charles River, replacing present aqueduct bridge. $340,000. E. Hamel, City Hall, engr. CD 8/30—ENR 9/5.

LOW BIDDERS

†Calif., Camp Clayton—Con. Q. M., Fort Ord, Dec. 26, 2 wells, pumps, pump houses from Western Well Drilling Co., 522 W. Santa Clara St., San Jose, **$29,188.**

Wash., Bellingham—H. A. Binzer, city comptroller, Dec. 27, trenching, backfilling for 14,950 industrial watermain, from A. Lind, Eureka Station, **$29,240.** Est. $42,000. CD 12/18.

CONTRACTS AWARDED

Ariz., Mesa—21,000 ft. water pipe, 16,250 ft. gas pipe and 1,500 ft. sewer pipe, **WPA, $42,163.**

Idaho, Sandpoint—Replacement watermains. **WPA. $69,000.**

†N. J., Fort Hancock—Con. Q. M., water and sewerage sys. addns., to Spiniello Constr. Co., 437 Riverside Ave., Newark, **$19,801.**

N. J., Newark—Water Dpt., City Hall Annex, c.i. watermains in Richmond and other streets, **WPA. $35,200.** W. Banks, City Hall Annex, city and WPA engr.

N. Y., Albany—Albany Co., Court House, high pressure tank house at Ann Lee Home, to Wm. J. Murray Constr. Co., Inc., 41 S. Pearl St.***plumbing, to Fitzsimmons & McAllister, Inc., 11 Van Tromp St.***electrical work, to Henzel Electric Co., Inc., 48 Clinton St. Total **$24,389.** Bids 11/15. CD 11/2—ENR 11/28.

N. Y., St. George—Dpt. Water Supply, Gas & Electricity, Municipal Bldg., New York, extend. watermains, **WPA. $398,279.** W. W. Johnston, 70 Columbus Ave., New York, dir. Div. Operations. CD 11/26—ENR 11/28.

N. C., Henderson—Henry T. Powell, mayor, watermain exten., **WPA. $52,886.**

N. C., Matthews—C. R. McLaughlin, mayor, water and sewerage sys., **WPA. $82,974.**

O., Nelsonville—Rehabilitation WW, development new water supply from Hocking River, complete treatment and softening plant, watermains and services, cleaning existing mains, installing meters at curb, etc., **WPA. $210,610.** CD 7/25—ENR 8/1.

O., Niles—Exten. water lines to Deforest Jct. of Pennsylania and Baltimore & Ohio Railroads, **WPA. $30,000.**

Tex., Galveston—City of Galveston, B. Harris, mayor, developing (not drilling) 5 deep water wells for expanded facilities account Army Camp at Hitchcock, 1 mi. 16 in. c.i. mains to connect with city's big booster station, etc., at Alta Loma (location of source of water supply of Galveston), separate contracts. **$70,000.** CD 12/24—ENR 1/2, under Alta Loma.

Tex., Griffith Park (near Beaumont)—WW sys. imprvs., 4- to 6-in. c.i. mains, fire hydrants, concrete storage reservoir, 150,000 gal. steel tank and 75 ft. tower, new pumps and chemical feeders, **WPA. $52,622.** M. D. Gater, Beaumont, engr.

Tex., Mineral Wells—J. C. Miller, mayor, increasing filter plant to 4 m.g.d. capacity, to R. B. Butler & Murphy, Bryan, **$81,200.** Est. $80,000. Bids 12/27. CD 12/13—ENR 12/19.

†Tex., San Antonio—Con. Q. M., Fort Sam Houston, water lines, sewer lines, gas lines, lighting facilities in warehouse area, force account. **$70,000.**

Utah, Salt Lake City—State Building Comm., constructing 6 in. c.i. supply line from Little Willow Creek to State Prison site, Salt Lake Co., to Ernest Stettler & Sons, Logan, **$48,751.** Est. $54,000. Bids 12/23. CD 12/13—ENR 12/19.

Wash., South Bend—E. R. Leber, water supt., City Hall, new water supply line and renewing portion intake, **WPA.** Est. **$47,000.**

Wis., Livingston—H. E. Eustice, village clk., water supply and distr. sys., **WPA. $49,285.**

†Alaska, Anchorage—War Dpt., 20 St. and Constitution Ave. N.W., Wash., D. C., 500,000 gal. elevated steel tank with piping and accessories at Elmendorf field, near here, to Pittsburgh-Des Moines Steel Co., 3414 Neville Island, Pittsburgh, Pa. **$75,527.**

SEWERS, WASTE DISPOSAL

PROPOSED WORK

Ala., Enterprise—Sewerage sys., sewage disposal plant, 28,000 lin. ft. pipe and underground pump. station. R. L. Kenan & Assoc., Bell Bldg., Montgomery, engrs.

Calif., Los Angeles—Sanitary sewer Fulton Ave. and Riverside Dr. Imprvt. Dist. $60,596. L. Aldrich, City Hall, engr.

Calif., Quincy—Quincy Sanitary Dist., surveys sewage disposal sys. $25,000. Plan bond election for same. C. C. Kennedy, 604 Mission St., San Francisco, engr.

Conn., New Canaan—Town, C. M. Cruikshank, Town Hall, preliminary plans trunk sewer, Meadow Lane, Hawthorne and Woodland Rds., S. Main St. $25,000.

Fla., Daytona Beach—Sewers. $70,000. Russell & Axon, Inc., 4903 Delmar St., St. Louis, Mo., engrs.

Ia., Cedar Rapids—Sanitary sewerage sys. addn. Over $25,000.

★**Ia., Cedar Rapids**—Flood control sewer project for east and west sides of city. $500,000.

Ia., Muscatine—H. H. Hanson, city clk., sewage plant and sewerage sys. imprvs., extens. Over $40,000. Sanley Eng. Co., Muscatine, engr. CD 8/7—ENR 8/22.

Mich., Marquette—M. A. Hogan, city clk., bids in spring, 1 story, 80x150 ft., brick, rein.-con. sewage disposal plant $170,000; 24x30 in. rein.-con. sewers $100,000. Shoecraft, Drury & McNamee, Savings Bank Bldg., Ann Arbor, engrs.

Neb., Lincoln—Surveys sewage disposal plant. Over $200,000. Black & Veatch, 4706 Bway., Kansas City, Mo., engrs.

N. J., Bayonne—Hudson Co., Court House, Jersey City, drainage sys., Hudson Blvd. $50,000. WPA. F. Radigan, Court House, Jersey City, co. and WPA engr.

N. J., Bloomfield and Montclair—Essex Co., Hall Records Bldg., Newark, rein.-con. sewers in East Passaic Ave. from W. Passaic to Coeyman Aves. in Bloomfield and in Grove St. from Watchung to Alexander Aves., Montclair. $54,060. WPA. W. Stickel, Hall Records Bldg., Newark, co. and WPA engr.

N. J., Newark—Essex Co., Hall of Records Bldg., rein.-con. sewer mains, catch basins, manholes, various roads. $52,250. WPA. W. Stickel, Hall of Records Bldg., county and WPA engr.

N. J., New Brunswick—Middlesex Co., Court House, New Brunswick, gravel drainage ditches, Federal Rd. and Mount's Mill Rd., Monroe Twp., and 15 in. v.c. drainage sewer, main Rahway Ave., Rahway. $60,936. WPA. G. Merrill, Court House, owner's and WPA engr.

N. J., New Brunswick—Middlesex Co., Court House, 17,400 ft. drainage ditches in Metlars Lane and 30,000 ft. in Matawan Old Bridge Rd. $50,495. G. Merrill, Court House, co. and WPA engr.

N. J., New Market—Piscataway Twp., Twp Hall, rein.-con. storm sewers, catch-basins, manholes, etc., Hughes Terrace, Olive, 7 and Water Sts., Ditch School, Mansfield and Poplar Rds. $52,588. WPA. J. H. Weitzen, Smith and Hobart Sts., Perth Amboy, owner's and WPA engr.

N. J., Perth Amboy—Rein.-con. sanitary sewers in various streets. $54,500. J. H. Weitzen, Smith and Hobart Sts., owner's and WPA engr.